5. (Amended) The medical device of claim 1 wherein the polymer is selected from the group consisting of polyetheretherketones, polyacetals, polyamides, polypropylenes, polyurethanes, polytetrafluoroethylenes, polyester teraphthalates, polycarbonates, and polysulfones.

6. The medical device of claim 1 wherein the polymer has an average thickness of at least about 10 microns.

7. The medical device of claim 1 wherein the polymer has an average thickness from about 100 microns to about 2000 microns.

8. The medical device of claim 1 wherein the medical device comprises a heart valve prosthesis, the heart valve prosthesis comprising a component that comprises the composite having the inorganic substrate and the polymer material.

9. (Amended) The medical device of claim 1 wherein the polymer material has structure forming a slot, hole, pin, button, barb or anchor.

10. (Amended) A medical device comprising a flexible composite component comprising an inorganic substrate and a polymer member covering at least a portion of the substrate, wherein the composite can be bent at least about 100 degrees without extending the material beyond its elastic limit.

11. The medical device of claim 10 wherein the inorganic substrate comprises a metal foil with a thickness less than about 500 microns.

12. The medical device of claim 10 wherein the polymer is selected from the group consisting of polyurethanes, polydimethylsiloxanes and polytetrafluoroethylenes.

13. The medical device of claim 10 wherein the polymer member has a thickness from about 10 microns to about 500 microns.

14. The medical device of claim 10 wherein the polymer member has a thickness from about 50 microns to about 300 microns.